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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/587,751

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Yusaku Shimaoka

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EXAMINER

HOWARD, RYAN D

ART UNIT

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/587,751	Applicant(s) SHIMAOKA ET AL.	
	Examiner RYAN HOWARD	Art Unit 2851	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 February 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,4-8 and 10-13 is/are rejected.
- 7) ☒ Claim(s) 3 and 9 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Acknowledgement made of amendment filed 2/26/2009

Specification

2. The abstract of the disclosure is objected to because the abstract is too long. Correction is required. See MPEP § 608.01(b).

Claim Rejections - 35 USC § 103

3. Claims 1,7, and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takeda et al. (US 2003/0218794 A1) in view of Yoshinaga et al. (US Patent 6,961,038 B2) in view of Pate et al. (US 7,391,475 B2)).

Regarding claims 1, 7, and 13, Takeda teaches a light emission method in which light as a light source for imaging is emitted using a first light source of emitting red light, a second light source of emitting green light and a third light source emitting blue light (110R-B, figure 10), said method comprising: a first light emitting step of making said first light source emit light in a first light emission period (RT, figure 5a); a second light emitting step of making said second light source emit light in a second light emission period (GT, figure 5a), and a third light emitting step of making said third light source emit light in a third light emission period (BT, figure 5a), wherein at least one duration compared to another duration of said first, second, and third light emission period are respectively different (figure 5a). Takeda further teaches a light collecting system collecting light from said first, second and third light sources (310, figure 10); a light

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modulation element modulating light collected by said light collecting system (330, figure 10); and a projection lens of projecting modulated light by said light modulation element (150, figure 10).

Takeda does not teach a fourth light emitting step of making said first light source, said second light source, and said third light source, emit light at the same time in a fourth light emission period, in a period for display of one image, and that at least one of said first light source, said second light source and said third light source emits light with a different light intensity compared to the remaining light sources in said fourth light emission period.

Yoshinaga teaches a fourth light emitting step of making said first light source, said second light source, and said third light source, emit light at the same time in a fourth light emission period, in a period for display of one image (figure 3).

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to modify the light emission sequence of Takeda to include the fourth light emission period of Yoshinaga because the fourth light emission period of Yoshinaga eliminates color sequential artifacts in allowing more realistic motion to be projected (column 2 lines 9-24 and 63-67).

Pate teaches adjusting one of said first light amount, said second light amount and said third light amount such that one of the color sources emits light with a different intensity than the other two color sources (column 12 lines 24-34). One of ordinary skill in the art would appreciate that this light intensity adjustment could be applied to the fourth emission period of Takeda in view of Yoshinaga thereby producing a fourth

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emission period wherein one of the first, second or third light sources emits with a different intensity in the fourth period than the other two light sources.

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to modify the projection system of Takeda in view of Yoshinaga to include the different emission intensities as taught by Pate because the different emission intensities of Pate allow the projector to display images with a finely adjusted gamut as well as a brighter gamut (column 12 lines 34-38), thereby providing for improved contrast.

Regarding claims 2 and 8, Yoshinaga teaches at least any one of the light intensity of said first light source in said first light emission period is different from that in said fourth light emission period; the light intensity of said second light source in said second light emission period is different from that in said fourth light emission period; and the light intensity of said third light source in said third light emission period is different from that in said fourth light emission period (BL_{R-B}, figure 3).

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to modify the light emission sequence of Takeda with the reduced intensity, simultaneous emission in the fourth period of Yoshinaga because the reduced intensity emission of Yoshinaga reduces the power consumption of the light source (column 10 lines 20-23).

Regarding claims 4 and 10, Yoshinaga teaches said first light emission period, said second light emission period, said third light emission period and said fourth light

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emission period are assigned for display of one image in a continuous or discontinuous manner (column 7 lines 58-65).

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to modify the light emission sequence of Takeda to include the fourth light emission period of Yoshinaga because the fourth light emission period of Yoshinaga eliminates color sequential artifacts in allowing more realistic motion to be projected (column 2 lines 9-24 and 63-67).

Regarding claims 5 and 11, Yoshinaga further teaches the first light emission period, the second light emission period, and the third light emission period are assigned for display of one image in a continuous or discontinuous manner (column 7 lines 58-65), and said fourth light emission period is assigned so as to be inserted in a period after one round of said first light emission period, said second light emission period, and said third light emission period (figure 3).

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to modify the light emission sequence of Takeda to include the fourth light emission period of Yoshinaga because the fourth light emission period of Yoshinaga eliminates color sequential artifacts in allowing more realistic motion to be projected (column 2 lines 9-24 and 63-67).

4. Claims 6 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takeda in view of Yoshinaga in view of Pate as applied to claims 4 and 10 above, and further in view of Shigeta (US 2002/0008712 A1).

Regarding claims 6 and 12, Takeda in view of Yoshinaga in view of Pate does not teach said fourth light emission period is divided into divided periods, and the divided periods are assigned for display of one image so as to be inserted between at least one pair of light emission periods of said first light emission period, said second light emission period and said third light emission period.

Shigeta teaches said fourth light emission period is divided into divided periods, and the divided periods are assigned for display of one image so as to be inserted between at least one pair of light emission periods of said first light emission period, said second light emission period and said third light emission period (figure 12).

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to modify the light emission sequence of Takeda in view of Yoshinaga in view of Pate to emit a combination of the three colors in between the emission of each color because the emission of a combination of the three colors in between the emission of each color avoids color mixture and variation in luminance and color on the surface of the modulator (paragraph 0101).

Allowable Subject Matter

5. Claims 3 and 9 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter:

The claims (1 and 7) from which 3 and 9 depend, include the limitation, "wherein said one of said first light source, said second light source and said third light source emits light with a different light intensity compared to the remaining light sources in said fourth light emission period." With the modification provided by Pate to change the emission intensities of one of the light sources in the fourth emission period, the idea previously taught by Yoshinaga that the ratio of the light amounts of the first, second and third light sources in their respective periods is the same as the ratio of the light amounts of each of the three light sources in the fourth emission period, is no longer deemed obvious. Pate is being used to teach away from this feature of Yoshinaga, therefore, claims 3 and 9 contain allowable subject matter.

Response to Arguments

6. Applicant's arguments with respect to claims 1, 7, and 13 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to RYAN HOWARD whose telephone number is (571)270-5358. The examiner can normally be reached on Monday-Friday 7:30-4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Diane Lee can be reached on (571)272-2399. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/William C. Dowling/
Primary Examiner, Art Unit 2851

/RYAN HOWARD/
Examiner, Art Unit 2851
5/8/2009